

Big Turkey Lake Sediment Removal Plan

FINAL REPORT- MUD CREEK AREA

Steuben County, Indiana

September, 2006



Prepared for:

Big Turkey Lake Improvement Association

240 Turkey Lake Lane 201
Hudson, IN 46747

Prepared by:



708 Roosevelt Road
Walkerton, Indiana 46574
574-586-3400

BIG TURKEY LAKE SEDIMENT REMOVAL PLAN STEUBEN AND LAGRANGE COUNTIES, INDIANA

TABLE OF CONTENTS

	PAGE
1.0 Project Description and Purpose	1
2.0 Design Rationale	2
3.0 Design and Construction Specifics	3
3.1 Public Input and Landowner Agreements	3
3.2 Sediment Characterization	3
3.3 Permitting	3
3.4 Hydraulic Dredging	4
3.5 Dewatering Basins	4
3.6 Turbidity Curtain	4
4.0 Bidding Requirements, Forms, and Information	4
5.0 Construction Schedule	5
6.0 Cost Estimates	5
7.0 Literature Cited	5

FIGURES

Figure 1. General project location map	1
Figure 2. Dredging and dredge material disposal basin locations	2

APPENDICES

- Appendix A. Sediment Depths Measurements.
- Appendix B. Landowner Agreements.
- Appendix C. Sediment Sampling Results.
- Appendix D. Project Permits.

BIG TURKEY LAKE SEDIMENT REMOVAL PLAN STEUBEN AND LAGRANGE COUNTIES, INDIANA

1.0 PROJECT DESCRIPTION AND PURPOSE

The Big Turkey Lake Sediment Removal Plan and subsequent dredging was completed as part of a series of projects sponsored by the Big Turkey Lake Improvement Association (Association) to improve water quality in Big Turkey Lake. The project was designed to improve the aesthetics and usability of Big Turkey Lake, which is located southeast of Stroh in Steuben and Lagrange Counties, Indiana (Figure 1). This report addresses one of six areas identified in the feasibility study for sediment removal and a location for disposal of the dredge material (Figure 2).

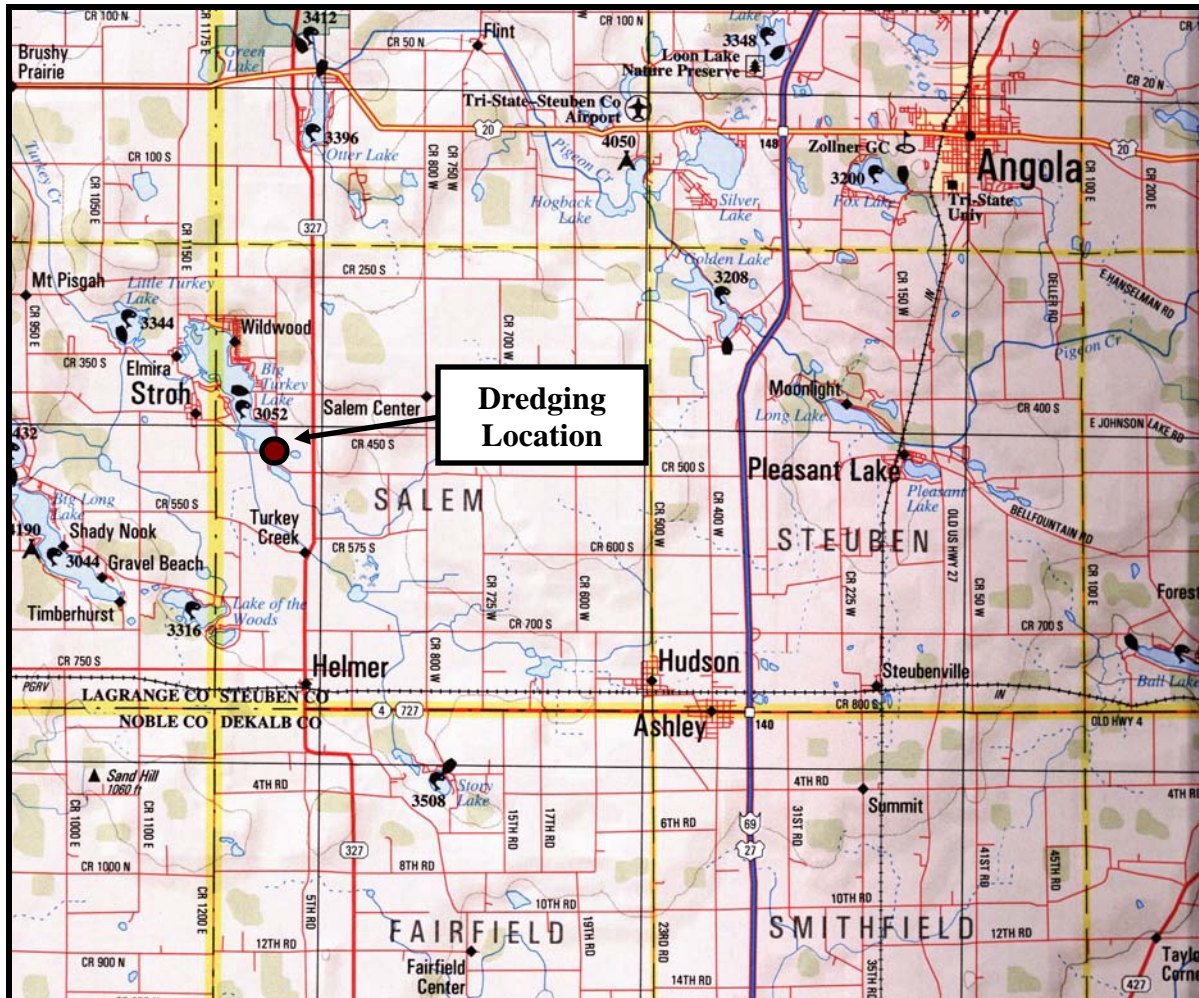


Figure 1. General project location map.

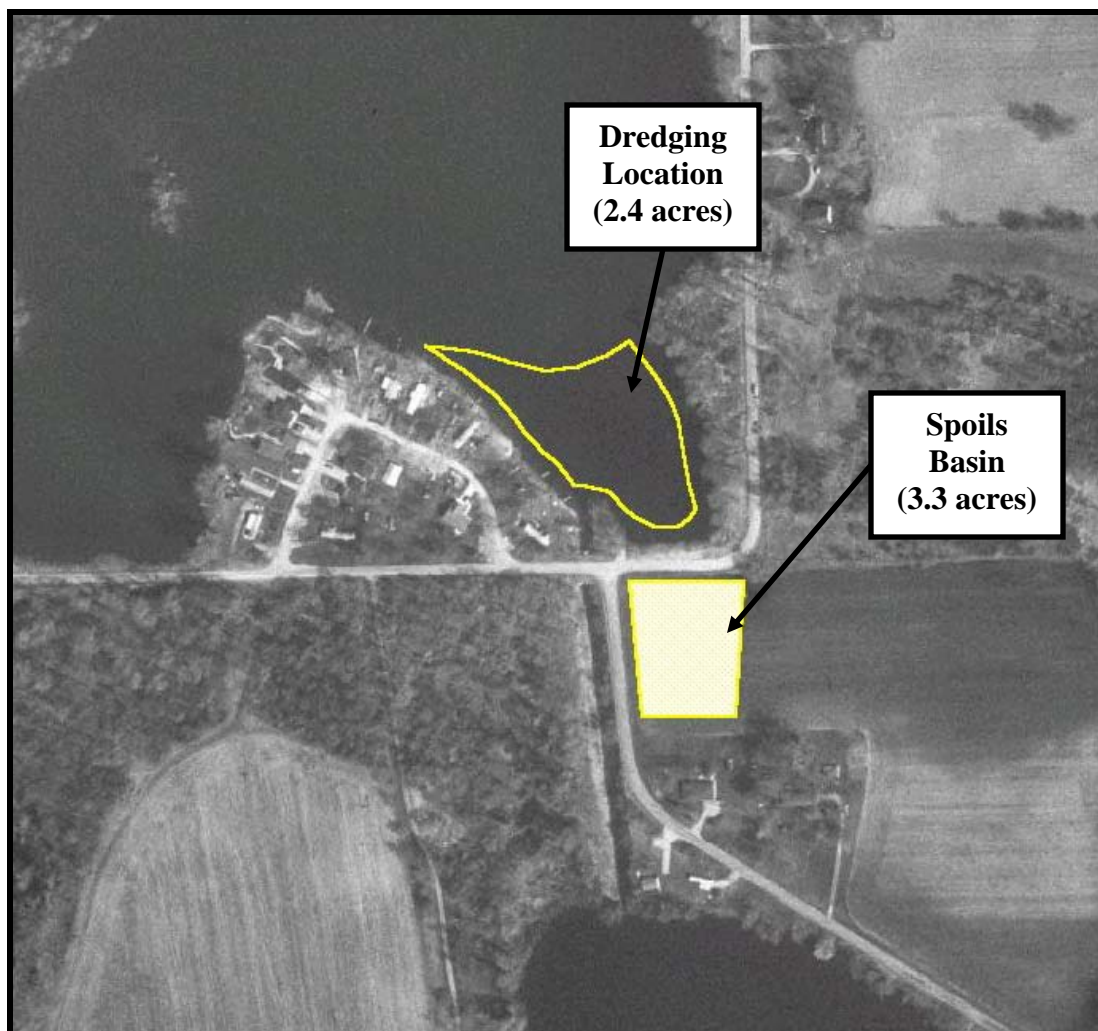


Figure 2. Dredging and dredge material disposal basin locations.

2.0 DESIGN RATIONALE

The Big Turkey Lake Improvement Association planned to hydraulically dredge accumulated sediment from one location within Big Turkey Lake during 2005. Approximately 40,000 cubic yards of accumulated sediment in 2.4 acres was subsequently removed from Big Turkey Lake near the mouth of Mud Creek during this project. Sediment was removed to an average depth of four feet. Sediment removal estimates were generated from sediment depth mapping and field estimates completed by the Big Turkey Lake Improvement Association during the summer of 2004. During field sampling, the Big Turkey Lake Improvement Association used a 2-inch PVC pipe to determine the depth of accumulated organic material or silt within the target area. Specifically, individuals measured water depth, accumulated sediment depth, and natural sediment depth. Sediment depth maps are included in Appendix A. Dredging volumes were calculated based on measured sediment depths and estimated dredging areas.

In concert with field-checking, sediment samples were inspected for sediment type and the probable origin of sediment material was determined. All sediment to be removed from the lake is organic material, such as remnant plant or woody debris, or silt. Exact locations of silt and

organic material origin could not be determined. It is estimated that silt originated from bare ground areas, such as agricultural fields or construction sites, within the Mud Creek subwatershed, while organic material is composed of dead and decaying in-lake and adjacent wetland plant material. Mud Creek drains approximately 4,420 acres of predominantly agricultural ground in Steuben and Dekalb Counties. Specifically, agricultural row crop or pasture land cover 60% of the Mud Creek subwatershed, while grassland, forest, and scrubland cover 31%, wetlands cover 9%, and urban land use cover less than 1% of the subwatershed. Approximately 35% of the soils in the Mud Creek subwatershed are mapped as Highly Erodible Land (Harza, 1990).

The lake association has actively attempted to reduce the flow of sediment from the watershed to Big Turkey Lake. In 1990, the Association completed a watershed diagnostic study which estimated that 2,343 tons of sediment flows from the Mud Creek subwatershed to Big Turkey Lake on an annual basis. In 2002, the Association completed an engineering feasibility study regarding the ecological, economical, and social feasibility of installing four water quality improvement projects (JFNew, 2002). Two of these projects were implemented in the last two years (JFNew, 2003 and 2004).

3.0 DESIGN AND CONSTRUCTION SPECIFICS

3.1 Public Input and Landowner Agreements

The Association identified all potential sediment removal areas and prioritized sediment removal from the Mud Creek outlet as the highest priority. The Association held one public meeting in 2004 to gather input from lake residents. Approximately 10 residents adjacent to the dredging area were contacted through the permitting and public notice process. The Association contacted individuals owning potential dredge spoil basin locations and obtained permission for the use of their land for dredge spoil dewatering. A copy of the signed landowner agreement is included in Appendix B.

3.2 Sediment Characterization

Sediment samples were taken by Big Turkey Lake residents and taken to the lab in Fort Wayne for analysis of metals. The lab results are in Appendix C. There were no levels of contaminants that exceeded EPA standards.

3.3 Permitting

A Lake Preservation Permit was required from the IDNR because excavation occurred “lakeward of the lake’s legal level or average shoreline”. Clean Water Act Section 401 Water Quality Certification from the IDEM and a Section 404 permit from the U.S. Army Corps of Engineers (Corps) were required because water from the dredged material was returned from the sediment dewatering basin to the lake. The IDNR, IDEM, and Corps permits were submitted in October 2004. A Rule 5 Erosion Control Permit was obtained from IDEM prior to beginning work on the disposal basin. Permits authorizing the sediment removal are included in Appendix D.

3.4 Hydraulic Dredging

Sediment was hydraulically dredged by Dredging technologies, Inc. from the mouth of Mud Creek within Big Turkey Lake. Dredging began in October 2005 after the sediment dewatering basin has been constructed. Return water pipes were installed through the berm of the basin and ran across the county road to the lake. Dredging was completed in January 2006. A request was made of the County Highway Department for permission to cross the road, provide gravel for a temporary ramp over the pipes crossing the road, and warning signs for traffic. The County provided the requested items. Daily monitoring of the project was required by the Association to ensure timely completion of dredging, and assist the dredger with various problems that developed during the dredge project. The Association and JFNew completed a post-dredging contour survey with a graduated PVC pipe; however, a detailed contour map of the dredged area was not created due to the lack of funding.



Figure 3: Dredging Photographs from December 2005

3.5 Dewatering Basin

A dewatering basin was constructed prior to the dredging activity. The dewatering basin was constructed by LaOtto Excavating within the area identified in Figure 2. The basin had minimum depth of 12 feet and enclosed approximately 58,000 square feet. Earthen berms were seeded with annual rye to control erosion. Silt fences were installed down slope of the dewatering basins to capture any construction site runoff, preventing the runoff from reaching Big Turkey Lake. The earthen berm had a minimum slope of 1(H):1(V) on both faces with an eight-foot top width. The dewatering basin held approximately 25,000 cubic yards of material by the time the project was complete. At the request of the owner, topsoil was conserved during the construction in one area in order for it to be used over the top of the spoils upon project completion.



Figure 3: Basin Site during dredging (December 2005) and after grading and seeding (September 2006).

The sediment was dewatered within the basin between January and July 2006 and the spoils were graded to match the surrounding landscape and seeded with grass. Silt fences were removed from the dewatering basin site after seeding had established growth.

4.0 BIDDING REQUIREMENTS, FORMS, AND INFORMATION

The lake association contracted with JFNew and Associates' Inc. to administer the bidding process, monitor project progress, and complete this report. Separate bids were sought for dredging and for the dewatering basin. The dewatering basin included silt fence (or equivalent) installation and dewatering basin construction and removal. The second bid included dewatering pipe and sediment pumping pipe installation and removal, turbidity curtain installation and removal, and hydraulic dredging. An invitation was sent to three bidders for each part of the work. The invitation included specifics regarding the dredging location and volume, sediment disposal basin location and construction details, project specifications, and bid return deadlines. Design specifics, access to the project site, and special construction issues were discussed with the bidders prior to bid submittal. Bid requests were sent out in April 2005 and awarded the bids in May 2005. A signed contract was obtained from each bidder along with insurance information prior to project implementation.

5.0 CONSTRUCTION SCHEDULE

The project was begun on October 1, 2005 with the basin constructed within two weeks. The dredging began in November 2005 and lasted until January 2006. The basin did not dry as fast as planned and it was July until 2006, before it was leveled and seeded.

6.0 COST ESTIMATES

It was estimated that sediment dewatering basin construction would cost \$28,000. The bids came in at \$27,500 and \$29,500. The higher bid was chosen due to the experience of the selected contractor. Hydraulic dredging was estimated at \$60,000. The only bid received for dredging was \$49,464. The contract for administrative oversight was granted to JFNew for \$8,800 making the total project cost of \$87,764. The original project estimate was \$93,200.

7.0 LITERATURE CITED

- Harza Engineering Company. 1990. Big Turkey and Little Turkey Lake Enhancement Feasibility Study. T by 2000, Indiana Department of Natural Resources, Division of Soil Conservation.
- J.F. New and Associates. 2002. Big Turkey Lake Engineering Feasibility Study. Lake and River Enhancement Program, Indiana Department of Natural Resources, Division of Soil Conservation.
- J.F. New and Associates. 2003. Mud Creek Bank Stabilization Design-Build Report Summary. Lake and River Enhancement Program, Indiana Department, Division of Soil Conservation.
- J.F. New and Associates. 2004. Big Turkey Lake Sediment Trap Design Report. Lake and River Enhancement Program, Indiana Department of Natural Resources, Division of Soil Conservation.
- J.F. New and Associates. 2005. Big Turkey Lake Draft Sediment Removal Plan. Lake and River Enhancement Program. Indiana Department of Natural Resources. Division of Fish and Wildlife.

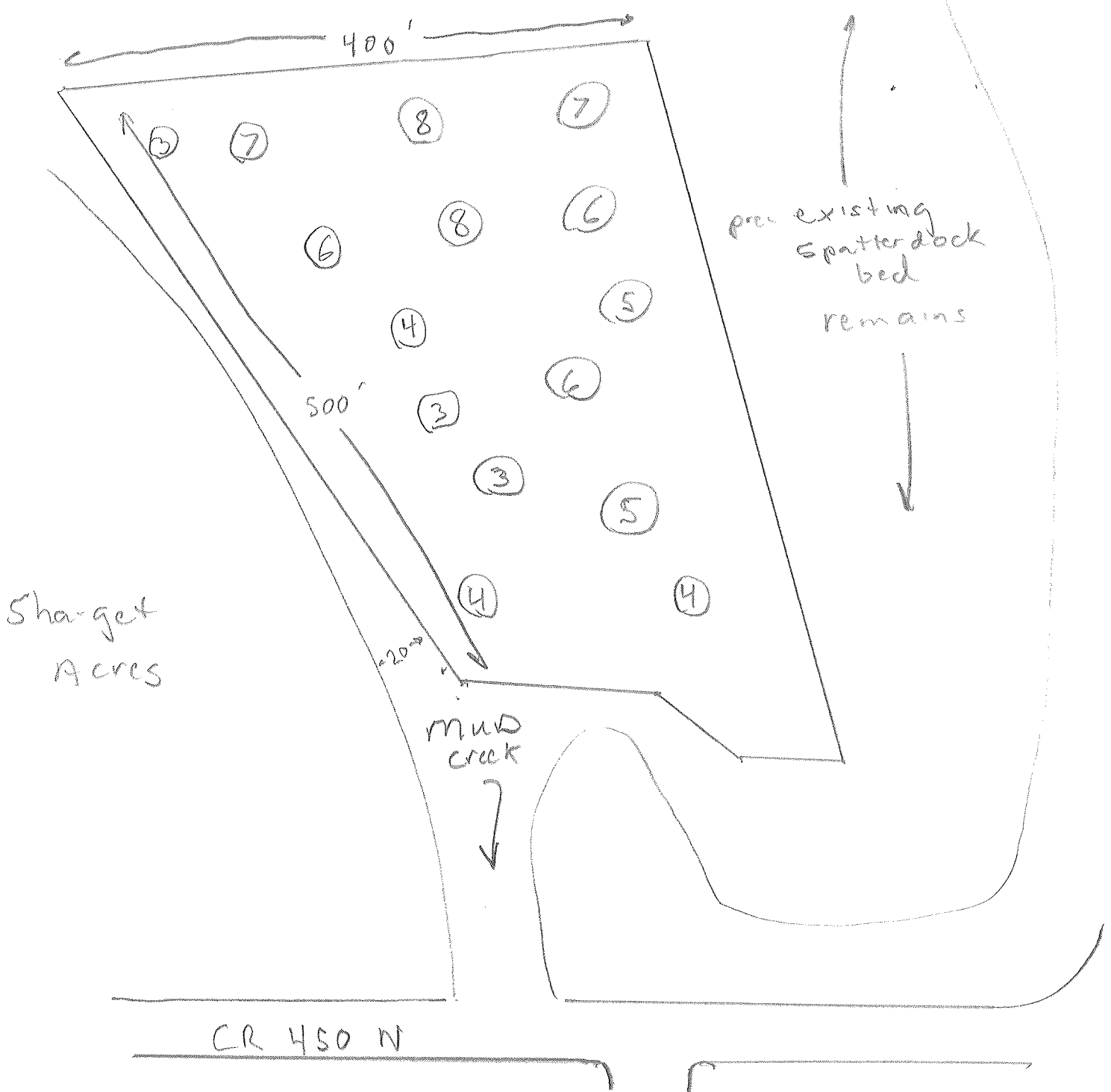
APPENDIX A:
SEDIMENT DEPTH MEASUREMENTS
POST DREDGING

Post Dredging Survey

Scale 1" = 100'

③ = water depth

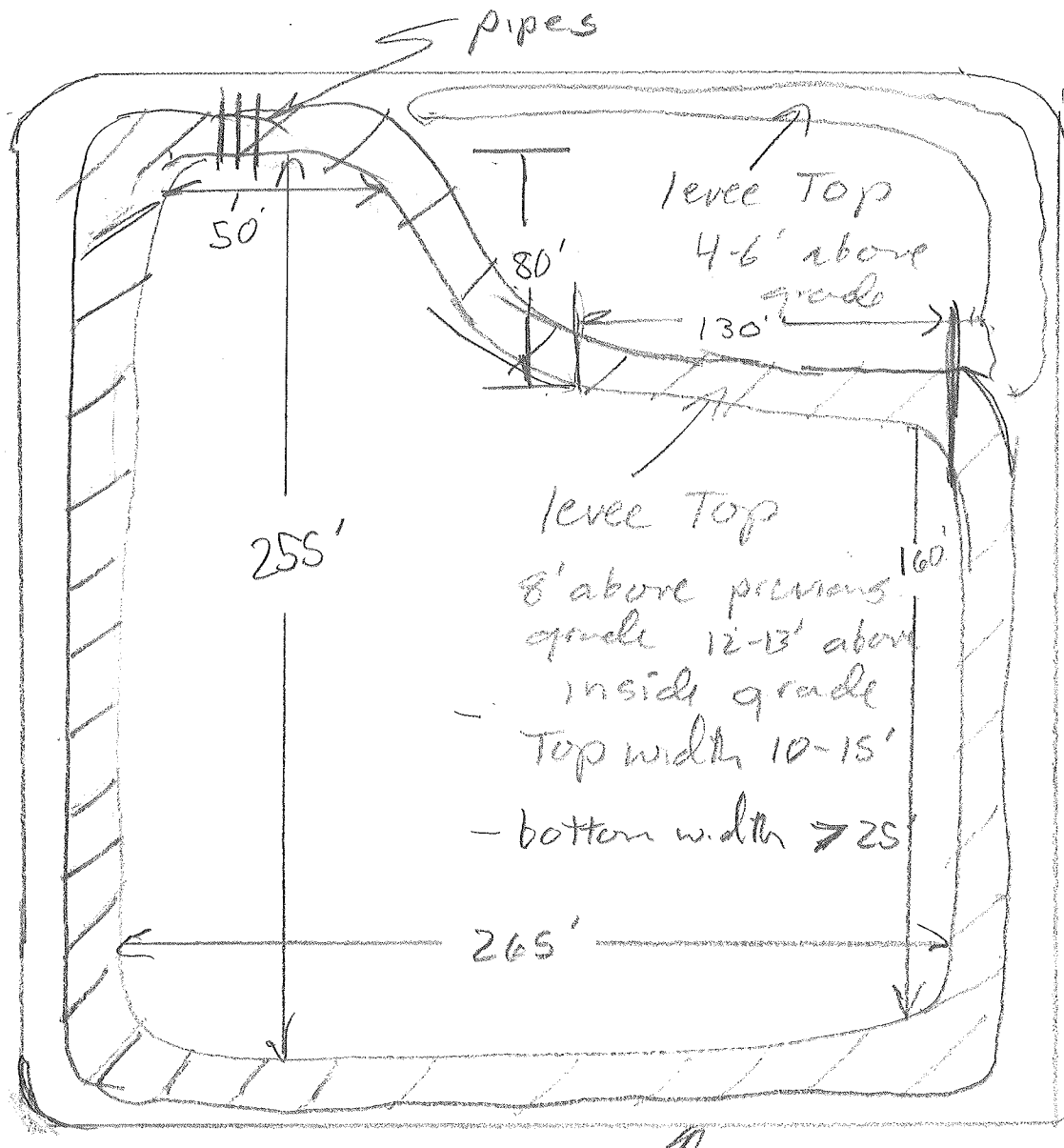
Big Turkey Lake



Big Turkey Lake

450 N. ROAD

Mud Creek



Silt Fence

↑
1" = ~60'
North

APPENDIX B:

LANDOWNER AGREEMENTS

**AGREEMENT FOR THE PURPOSE OF
TEMPORARY LAND USE FOR DREDGE SPOILS**

This Agreement, made and entered into on this 4 day of FEB 2005, by and between Wayne Schurr (THE OWNER) and the Big Turkey Lake Improvement Association (THE ASSOCIATION), a not-for-profit corporation organized under the laws of the State of Indiana.

WITNESSETH:

THE OWNER, in consideration of the rents and covenants herein contained, does hereby enter in this Agreement for the use and maintenance of not more than three acres of real property located in Salem Township, Steuben County, Indiana in the NW 1/4, SW1/4, SW1/4 of Section 17, Township 36 North, Range 12 East and shown on the attached topographic sheet, attached as Exhibit A (hereinafter often referred to as the Property) and does grant to THE ASSOCIATION access to said Property for construction and maintenance of a temporary dewatering basin.

WHEREAS, THE ASSOCIATION is a not-for-profit Indiana Corporation which is dedicated to improving the water quality of Big and Little Turkey Lakes, located in Steuben and LaGrange County, Indiana; and

WHEREAS, THE ASSOCIATION wishes to undertake activities, including, construction and maintenance of a temporary dewatering basin on the Property as part of its Lake Enhancement project to improve the water quality of Big Turkey Lake, located in Steuben and LaGrange County, Indiana; and

WHEREAS, THE OWNER is in agreement with THE ASSOCIATIONS' desire to improve the water quality of Big Turkey Lake.

NOW, THEREFORE, THE OWNER, for themselves, their successors and assigns, and their administrators, in consideration of the covenants, undertakings and agreements hereinafter set forth, and in consideration of the sum of Two Thousand Dollars (\$2,000.00) and other valuable consideration, the receipt of which is hereby acknowledged, hereby grants access to THE ASSOCIATION to Property described hereinabove under the following terms and conditions:

AGREEMENT PART I - ACCESS

1. REFERENCE. Agreement Part I shall refer to the access unto the Property as designated on the attachment marked Exhibit A.

2. TERM. The term shall commence on October 1, 2005 and shall continue for a term of one year.

3. USE.

A. THE OWNER grants to THE ASSOCIATION, their agents and assigns, the right to do specific acts on the Property as set out herein and THE OWNER retains all rights to the Property, with consideration of those rights granted to the THE ASSOCIATION.

B. THE OWNER grants THE ASSOCIATION reasonable right of access for the purpose of

construction, maintenance, inspection, and removal of a temporary dewatering basin to contain the hydraulic dredge spoils from the southeast corner of Big Turkey Lake. Removal of the temporary dewatering basin means, for the purpose of this agreement, leveling of the dried spoil material and temporary dewatering basin to conform to the surface of the existing landscape while allowing for proper surface drainage on the property. The existing topsoil in the area of the temporary dewatering basin shall be conserved during construction and used to overlay the dried spoils once the project is complete. Upon completion of the project the topsoil shall be spread to an even thickness over the spoils in a manner suitable for planting with standard agricultural equipment. No re-vegetation of the site by THE ASSOCIATION will be necessary under this agreement.

C. THE OWNER grants to THE ASSOCIATION access, as delineated specifically on the attachment marked Exhibit A and designated as "limits of construction" owner grants the right to ingress and egress from the property as well as reasonable access on, over and along the said access easements for the purpose of the construction, inspection, maintenance and repair of the structures as described herein, provided, that THE ASSOCIATION shall give prior notice of their intentions before entering upon the Property. THE OWNER, for themselves, their heirs, assigns and administrators agree that reasonable access shall be maintained and in the event of construction or building upon the existing access during the term of this agreement, THE ASSOCIATION shall be so advised of changes and setting out of the alternate access to the Property.

AGREEMENT PART II - GENERAL PROVISIONS

1. MANAGEMENT.

A. THE OWNER agrees that THE ASSOCIATION and its agents shall be permitted to enter onto the Property with such machinery, materials and equipment and the personnel and workers to operate said machinery and equipment to carry out the intended use of the Property by THE ASSOCIATION as described in Part I B above. It is agreed that all improvements shall stay with the land.

B. THE OWNER agrees that THE ASSOCIATION shall have the right to take such tests and borings on the Property as THE ASSOCIATION deems necessary to carry out its intended use, and to take photographs of the Property, provided, THE OWNER is advised of such borings, tests, and photographs, and the necessity of such.

C. THE OWNER limits the rights granted to THE ASSOCIATION as contained herein, and that THE ASSOCIATION may enter onto the Property for the intended use as described, and not for the recreational use by THE ASSOCIATION and/or its agents, or the general public.

D. Rights to the Property shall be retained by THE OWNER. Further, THE OWNER agrees that those activities agreed between the parties will not be interfered with, provided, that THE ASSOCIATION has not deviated from said agreement of intended use without first securing the permission or agreement from THE OWNER.

E. THE ASSOCIATION shall give notice to THE OWNER of its intention to enter onto the Property for purpose of inspection, maintenance and repair of structures, and reconstructed areas. THE ASSOCIATION shall not enter Property without permission from THE OWNER, which permission will not be unreasonably withheld.

F. Upon completion of the project, THE ASSOCIATION will retain maintenance rights to the

reconstructed area for the period of the agreement, although THE OWNER may manage and control plant and animal life on the Property.

2. TAXES. Shall be borne by THE OWNER, or their successors and/or assigns of the said real estate, and any assessments, shall also be born by the same.

3. CONDEMNATION. THE OWNER agrees that if the Property, or any part thereof, shall be taken or condemned for public or quasi-public use or purpose by any competent authority, THE ASSOCIATION shall have the right to defend against such attempted condemnation of the Property or any part thereof. If, in the opinion of THE ASSOCIATION, the Property becomes unmanageable or unsuitable for its Intended Use and Purpose as a result of such condemnation, this Agreement may be terminated by THE ASSOCIATION upon sixty (60) days written notice to THE OWNER.

4. LIABILITY/INSURANCE.

A. Nothing in this Agreement shall be construed as imposing any additional liability on THE OWNER. THE ASSOCIATION shall name THE OWNER as additional insured on THE ASSOCIATION'S liability policy. Prior to the start of construction and throughout the term of the Agreement thereafter, THE ASSOCIATION shall carry a policy of public liability insurance covering all of its activities on the Property. At the request of THE OWNER, THE ASSOCIATION shall provide THE OWNER with a certificate or other evidence that such insurance is in effect.

B. THE ASSOCIATION shall be responsible for and shall indemnify and hold THE OWNER harmless from any and all costs, including the expense of defending any claim of legal action related to any injury or damage to the project area, caused by or resulting from THE ASSOCIATION's activities on the Property.

5. DAMAGES.

A. THE ASSOCIATION shall restore all road surfaces owned by THE OWNER to their original condition if said surfaces are damaged by equipment and/or machinery used by THE ASSOCIATION and its agents during ingress and egress from the Property.

B. Before final completion of the work on said premises, THE ASSOCIATION and its agents shall return the construction site to a condition suitable for planting vegetation with standard agricultural equipment or to the satisfaction of THE OWNER whichever is less.

C. This commitment pertains to construction, repair and maintenance completed by THE ASSOCIATION and its agents on the Property.

6. EXPENSE. THE ASSOCIATION shall be responsible for all expenses incurred in the construction, repair, use, inspection and maintenance of the Intended Use of the Property by THE ASSOCIATION as set out in Part I of this Agreement.

7. NO LIEN AGREEMENT. In consideration of the rents and covenants herein contained, THE ASSOCIATION, for itself and for all contractors, subcontractors, laborers, or persons performing labor upon or furnishing materials or machinery for the Intended Use of the Property as set out herein, agrees that:

A. No lien shall attach to the Property or to THE OWNER'S property, or to any structure or other improvement to be constructed on the Property; and

B. Any recording of this Agreement is intended solely for the purpose of giving proper notice as provided under IC 32-8-3-1 et seq.; and no lien whatsoever is created against the real estate as the result of the execution or recordation of this Agreement.

8. TRESPASS. THE OWNER grants to THE ASSOCIATION and its contractor(s) permission to enter onto the Property during normal working hours (7am to 7pm), *with proper notice*, to carry out its Intended Use as set out herein. All others shall be considered trespassers on the Property unless the party has permission of THE OWNER to be on the Property.

9. DEFAULT.

A. Breach of any covenant herein shall constitute a default under this Agreement. In the event of a default, the defaulting party shall be entitled to thirty (30) days written notice specifying the nature of the default and giving the defaulting party an opportunity to cure the default. If the default is not corrected within thirty (30) days after written notice is received, the injured party may elect to terminate this Agreement.

B. If the use intended for the Property is not approved by any governmental agency having jurisdiction over the reconstruction project, THE ASSOCIATION and THE OWNER shall each have the right to terminate the Agreement by giving written notice to the other party. Within sixty (60) days from the date the notice is received by THE OWNER, the Agreement shall be null and void.

10. NOTICE. Any notice required by this Agreement shall be served upon the other party by mail at the address set forth below or at such other address as the parties may hereinafter designate:

Wayne Schurr

President – Big Turkey lake Improvement Association

10030 W 500 S

P.O. Box 186

Hudson, IN 46703

Stroh, IN 46789

11. AGENTS. Where in this instrument rights are given to the Big Turkey Lake Improvement Association, THE ASSOCIATION or THE OWNER, such rights shall also extend to the agents, officers or employees of the parties.

12. BINDING EFFECT. This Agreement shall become effective at the time construction on the Property begins and shall be binding upon THE OWNER, their heirs, personal representatives, successors and assigns and upon THE ASSOCIATION and any successor organizations.

13. TITLE. THE OWNER hereby represent and warrant that they are owners of the Property covered by this Agreement and that they have the right to enter into this Agreement and to bind themselves and their heirs, successors, assigns, and personal representatives.

14. This Agreement shall be interpreted under the laws of the State of Indiana.

15. Headings are for reference only and do not affect the provisions of this Agreement.

16. Where appropriate, the singular shall include the plural.

17. This Agreement contains all of the agreements of the parties, all prior negotiations, understandings and agreements having been merged into it. Amendments of this Agreement shall not be effective unless made in writing and signed by the parties.

18. In the event THE ASSOCIATION should cease to exist, the Agreement shall be binding upon the

organization that succeeds the said association, provided that the succeeding organizations' membership consists of property owners of real estate on Big Turkey Lake, Steuben or LaGrange County(s), Indiana.

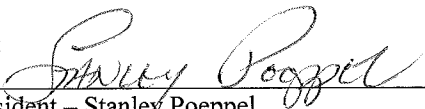
19. Any person signing this Agreement in a representative capacity for a party affirms under the penalties for perjury that he or she has the actual authority to so sign.

IN WITNESS WHEREOF, Wayne Schurr, THE OWNER(s), and Stanley Poeppel, current President of THE ASSOCIATION, have caused this Agreement to be executed on the day and year above first written with the following signatures.



THE OWNER – Wayne Schurr

BIG TURKEY LAKE IMPROVEMENT ASSOCIATION

BY: 

President – Stanley Poeppel

Witness

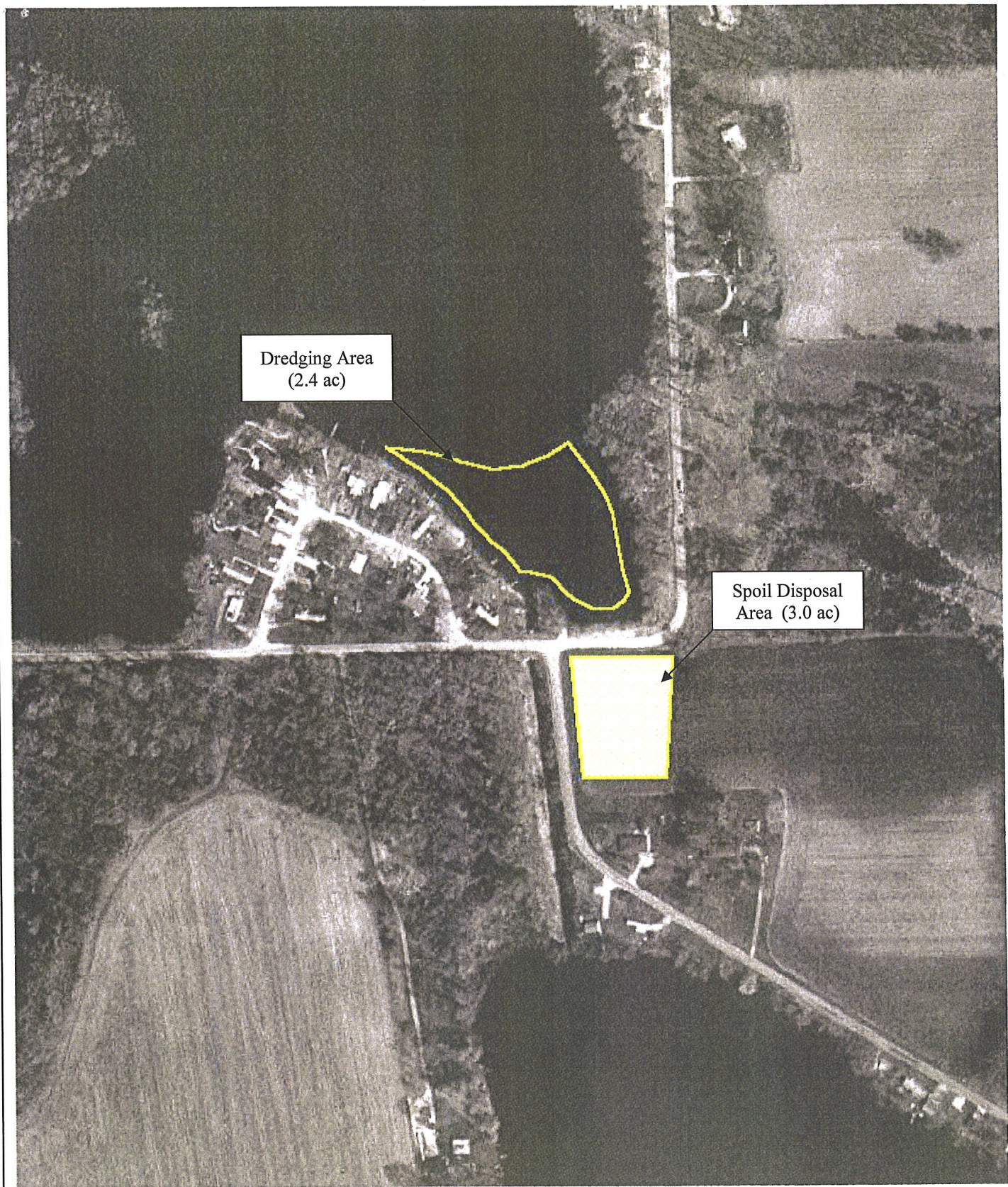


Exhibit A: Sediment Sample Locations
Big Turkey Lake
Big Turkey Lake Improvement
Association
Steuben County, Indiana



Scale: 1" = 400'

JFNew # 00-08-03
(03)



708 Roosevelt Road, Walkerton, IN 46574
Phone 574-586-3400 / Fax 574-586-3446
www.jfnew.com

APPENDIX C:

SEDIMENT SAMPLING RESULTS

.



REPORT OF ANALYSIS

Ms. Sara Peel
J.F. New & Associates
708 Roosevelt Road
Walkerton, IN 46574
Tel No: 574-586-3400
Fax No: 574-586-3446
PO No:
Project Name: Big Turkey Lake

Report Date: 10/20/03
EIS Order No: 031000071
EIS Sample No: 092127
EIS Project No: 2325-1000-03
Client Sample ID: BTL - Site 1
Date Collected: 10/7/03
Date Received: 10/8/03
Collected By: Client

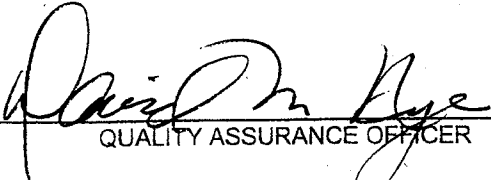
This report presents results of analysis for your sample(s) received under our Order No above. This Number is to be used in all inquiries concerning this report. The EIS Sample No above, as well as your Sample ID, refer to the first sample in a multi-sample submission

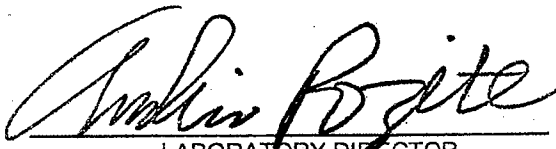
DEFINITIONS:

RDL = Reporting Detection Limit for your sample and may include adjustments for matrix interferences.
nd = Not Detected at the RDL value. If present, result is less than this value.
< = Not Detected at the numerical value shown. If present, result is less than this value.
[] = Result is estimated due to matrix interferences or calibration curve exceedence.

CHAIN-OF-CUSTODY is enclosed if received with your sample submission.

DRINKING WATER CERTIFICATIONS: Chemistry = C-71-02 Bacteriology = M-76-5


QUALITY ASSURANCE OFFICER


LABORATORY DIRECTOR

The data in this report has been reviewed and complies with EIS Quality Control unless specifically addressed above.

SAMPLE RESULTS

Page 2 of 2

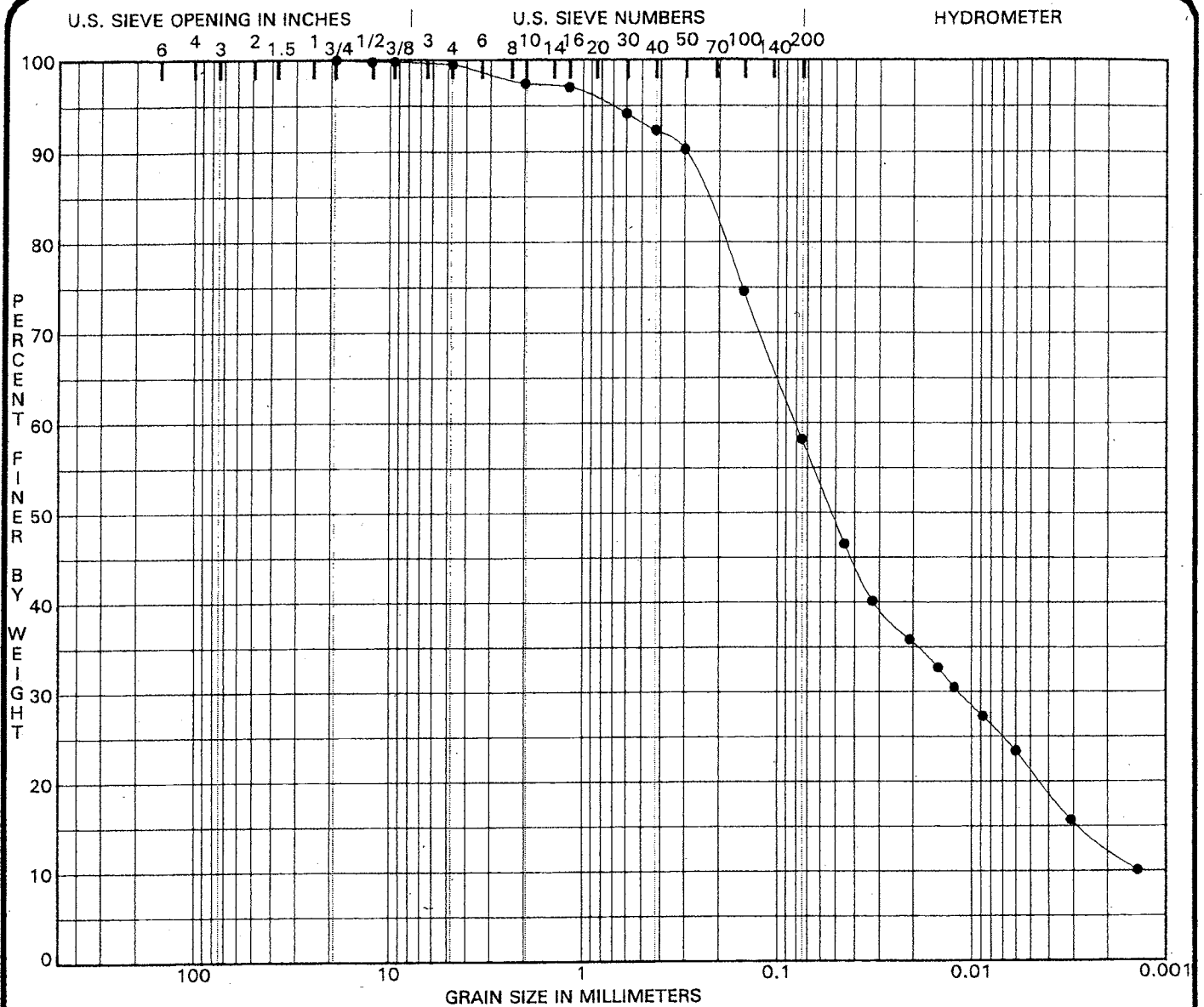
Client Name: J.F. New & Associates

Client Project: Big Turkey Lake

Report Date: 10/20/03

EIS Order No: 031000071

EIS Lab Number	Client Description	Sample Date	Parameter	Result	Units	RDL	Test Date	Analyst ID	Method
092127	BTL - Site 1	10/7/03	Elutriate Preparation	Complete			10/8/03	E09	EPA/Corps
		10/7/03	Nitrogen(Ammonia)	20.7	mg/L	0.05	10/14/03	E03	350.1
092128	BTL - Site 2	10/7/03	Elutriate Preparation	Complete			10/8/03	E09	EPA/Corps
		10/7/03	Nitrogen(Ammonia)	16.0	mg/L	0.05	10/14/03	E03	350.1
092129	BTL - Site 3	10/7/03	Elutriate Preparation	Complete			10/8/03	E09	EPA/Corps
		10/7/03	Nitrogen(Ammonia)	12.6	mg/L	0.05	10/14/03	E03	350.1



COBBLES	GRAVEL		SAND			SILT OR CLAY
	coarse	fine	coarse	medium	fine	

Sample Identification	USCS Classification	MC%	LL	PL	PI	Cc	Cu
● 1	OH, SANDY ORGANIC SILT	149.4	55	50	5		
% Gravel (>4.75mm)		% Sand (4.75 to .075mm)		% Silt (.075 to .005 mm)		% Clay (<.005mm)	
0.5		41.3		36.9		21.3	
Grain Size (mm)	% Passing	Grain Size (mm)	% Passing	Grain Size (mm)	% Passing		
64.0	100.0	0.5	93.1	0.016	33.4		
16.0	99.9	0.25	86.1	0.008	26.3		
4.0	99.1	0.125	70.3	0.005	21.3		
2.0	97.4	0.075	58.2	0.002	12.6		
1.0	96.3	0.050	48.8				

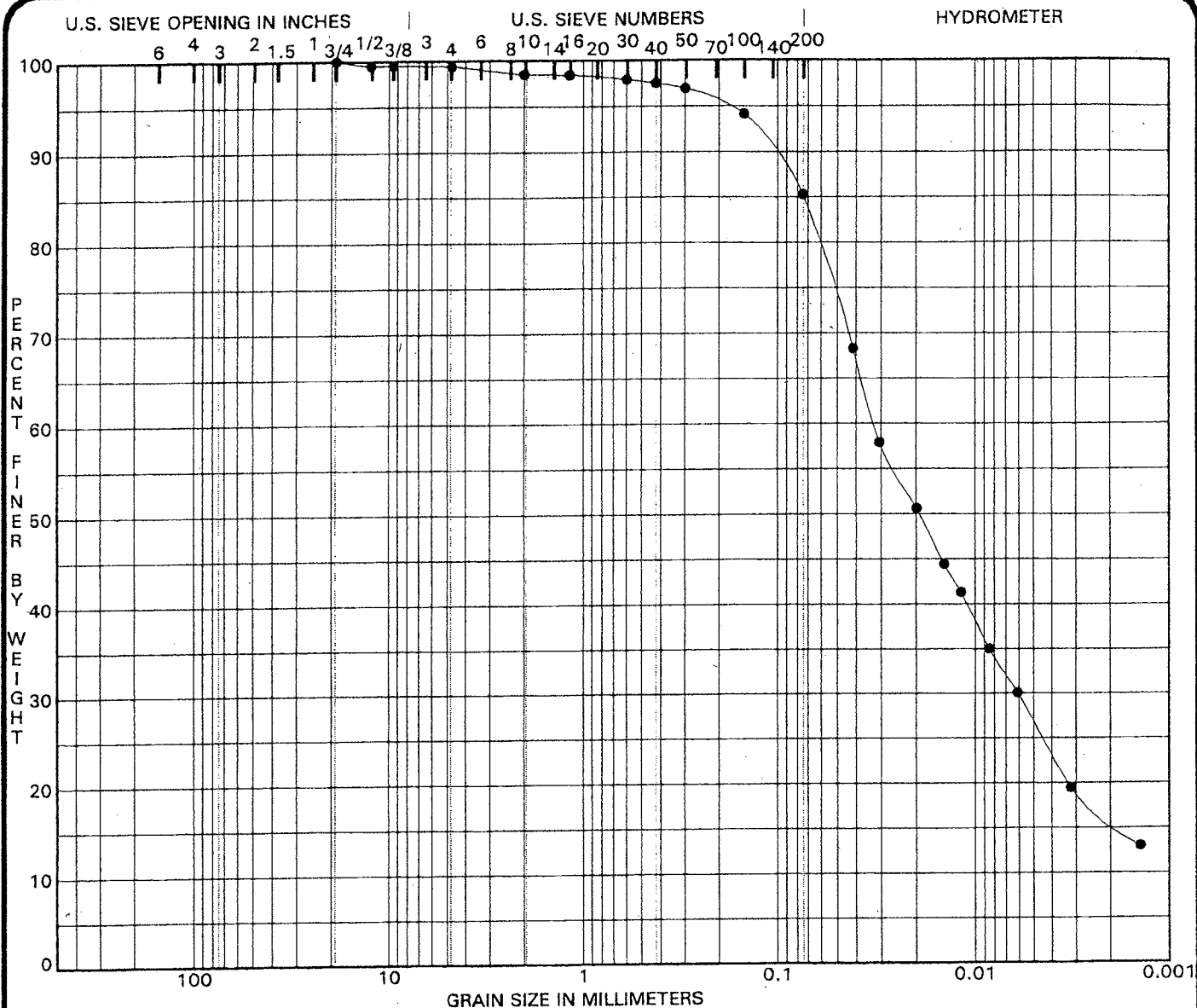


PROJECT Big Turkey Lake
 LOCATION Steuben County, Indiana
 CLIENT JFNEW
 EEI PROJECT NO. 2-03-197

CLIENT ID NO.
 DATE 11-7-03

GRAIN SIZE DISTRIBUTION CURVE

Earth Exploration, Inc.
 7770 West New York Street Indianapolis, Indiana 46214
 317-273-1690 / 317-273-2250 (Fax)



COBBLES	GRAVEL		SAND			SILT OR CLAY
	coarse	fine	coarse	medium	fine	

Sample Identification	USCS Classification		MC%	LL	PL	PI	Cc	Cu
● 2	OH, ORGANIC SILT with SAND		164.1	75	64	11		
% Gravel (>4.75mm)		% Sand (4.75 to .075mm)		% Silt (.075 to .005 mm)		% Clay (<.005mm)		
0.6		14.1		58.5		26.8		
Grain Size (mm)	% Passing	Grain Size (mm)	% Passing	Grain Size (mm)	% Passing			
64.0	100.0	0.5	97.7	0.016	46.4			
16.0	99.8	0.25	96.2	0.008	34.1			
4.0	99.2	0.125	91.8	0.005	26.8			
2.0	98.5	0.075	85.3	0.002	15.8			
1.0	98.3	0.050	73.6					

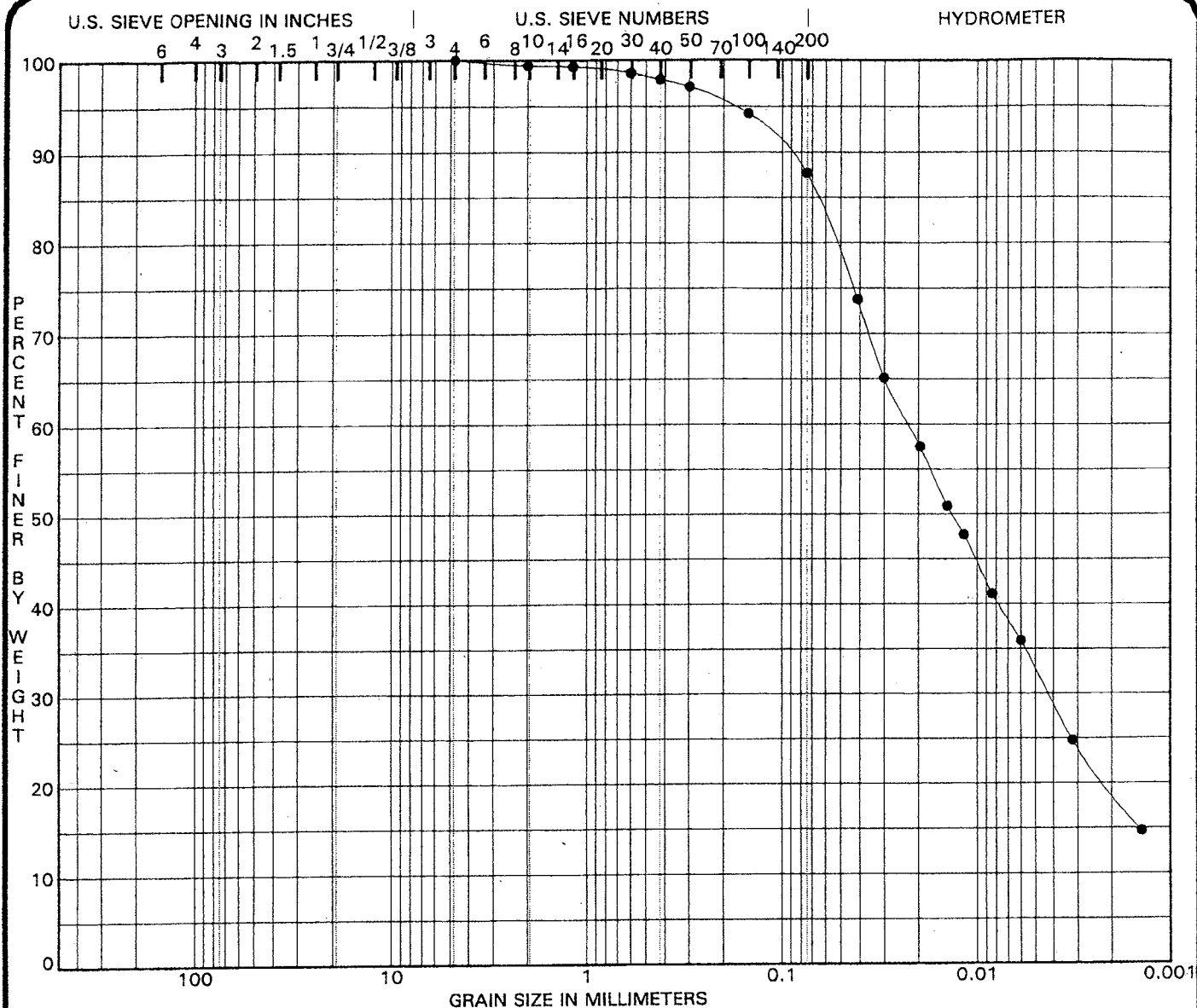


PROJECT Big Turkey Lake
 LOCATION Steuben County, Indiana
 CLIENT JFNEW
 EEI PROJECT NO. 2-03-197

CLIENT ID NO.
 DATE 11-7-03

GRAIN SIZE DISTRIBUTION CURVE

Earth Exploration, Inc.
 7770 West New York Street Indianapolis, Indiana 46214
 317-273-1690 / 317-273-2250 (Fax)



APPENDIX D:

PERMITS

STATE OF INDIANA
DEPARTMENT OF NATURAL RESOURCES

MAILED FEB 02 2005

**CERTIFICATE OF APPROVAL
PUBLIC FRESHWATER LAKE**

APPLICATION # : PL-19716

LAKE : Big Turkey Lake

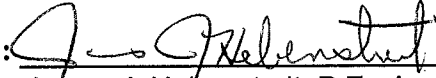
APPLICANT : Big Turkey Lake Improvement Association
Stan Poeppel
4302 East Tillman Road
Fort Wayne, IN 46816-4219

AGENT : JF New & Associates, Inc
John Richardson
708 Roosevelt Road, Suite A
Walkerton, IN 46574-1220

AUTHORITY : IC 14-26-2 with 312 IAC 11

DESCRIPTION : Approximately 11,000 cubic yards of sediment will be hydraulically dredged from the lakebed at the outlet of Mud Creek. A maximum of 2.8' of sediment will be removed from an approximate 2.5 acre area. Details of the project are contained in information and plans received at the Division of Water on December 24, 2003, February 24, 2004, July 7, 2004, and November 3, 2004.

LOCATION : Lakewood Bay, Turkey Creek, Public Access, Old Mill, Mud Creek, and Lakeside in Big Turkey Creek near LaGrange, Salem Township, Steuben County
SE $\frac{1}{4}$, NE $\frac{1}{4}$, SE $\frac{1}{4}$, Section 18, T 36N, R 12E, Stroh Quadrangle
UTM Coordinates: Downstream 4603873 North, 651847 East

APPROVED BY : 
James J. Hebenstreit, P.E., Assistant Director
Division of Water

APPROVED ON : February 2, 2005

Attachments: Notice Of Right To Administrative Review
General Conditions
Special Conditions
Service List

**STATE OF INDIANA
DEPARTMENT OF NATURAL RESOURCES**

SPECIAL CONDITIONS

APPLICATION #: PL- 19716

PERMIT VALIDITY : This permit is valid for 24 months from the "Approved On" date shown on the first page. If work has not been completed by February 02, 2007 the permit will become void and a new permit will be required in order to continue work on the project.

This permit becomes effective 18 days after the "MAILED" date shown on the first page. If both a petition for review and a petition for a stay of effectiveness are filed before this permit becomes effective, any part of the permit that is within the scope of the petition for stay is stayed for an additional 15 days.

CONFORMANCE : Other than those measures necessary to satisfy the "General Conditions" and "Special Conditions", the project must conform to the information received by the Department of Natural Resources on: December 24, 2003, February 24, 2004, July 7, 2004 and November 3, 2004. Any deviation from the information must receive the prior written approval of the Department.

Number	Special Condition
(1)	do not work in the waterway from March 15 through September 15 without the prior written approval of the Division of Fish and Wildlife
(2)	dredging must be contained within the 2.5 acre site approved by this permit
(3)	dredging may not be conducted in water with a depth of 6 feet or greater, unless the applicant can demonstrate with additional sediment samples that the material is eroded material and not naturally occurring lakebed material
(4)	to avoid the significant stand of floating and emergent wetland plants, dredging may not be conducted within 75 feet of the eastern project shoreline
(5)	if the lake shoreline is altered as a result of the temporary placement of the discharge pipes or the dredging operation, the applicant will be responsible for restoring the shoreline with materials consistent with the Natural Resource Commission Lake Rules

**STATE OF INDIANA
DEPARTMENT OF NATURAL RESOURCES**

SERVICE LIST

APPLICATION #: PL- 19716

Big Turkey Lake Improvement Association
Stan Poeppel
4302 East Tillman Road
Fort Wayne, IN 46816-4219

JF New & Associates, Inc
John Richardson
708 Roosevelt Road, Suite A
Walkerton, IN 46574-1220

*US Army Corps of Engineers, Detroit District
Gary Mannesto
Regulatory Functions Branch
PO Box 1027
Detroit, MI 48231-1027

Steuben County Drainage Board
County Surveyor
County Office Building
317 South Wayne Street, Suite 3K
Angola, IN 46703-1958

Steuben County Lakes Council, Inc
Sue Myers, Secretary
207 South Wayne Street, Suite B
Angola, IN 46703-1936

*Indiana Department of Natural Resources
North Region Headquarters Dist 2
Division of Law Enforcement
1124 North Mexico Road
Peru, IN 46970

Steuben County Plan Commission
317 South Wayne Street
Suite 3-L
Angola, IN 46703-1966

Steuben County Soil and Water Conservation
District
Peachtree Plaza 200
1220 North 200 West
Angola, IN 46703-9171

Staff Assignment:

Administrative	: R. Tony Scott
Technical	: R. Tony Scott
Environmental	: Christie L. Kiefer



INDIANA DEPARTMENT OF ENVIRONMENTAL MANAGEMENT

We make Indiana a cleaner, healthier place to live.

Joseph E. Kernan
Governor

Lori F. Kaplan
Commissioner

100 North Senate Avenue
P.O. Box 6015
Indianapolis, Indiana 46206-6015
(317) 232-8603
(800) 451-6027
www.IN.gov/idem

VIA CERTIFIED MAIL 7002 0510 0004 2581 5318

January 7, 2005

Mr. Stan Poeppel
Big Turkey Lake Improvement Association
240 Turkey Lake Lane 201
Hudson, IN 46747

Dear Mr. Poeppel:

Re: Section 401 Water Quality Certification
Project: Mud Creek dredging
IDEM No.: 2004-606-76-RDC-A
County: Steuben

Office of Water Quality staff has reviewed your application for Section 401 Water Quality Certification dated October 8, 2004, and received October 20, 2004. According to the application, you propose to hydraulically dredge approximately 11,000 cubic yards of sediment from Big Turkey Lake at the outlet of Mud Creek. An average thickness of 2.8 feet of accumulated sediment will be removed from a 2.4 acre area where sediment loads from Mud Creek have silted in Big Turkey Lake. Sediments will be pumped to a contained disposal facility at the corner of CR 1000 West and CR 475 South. The purpose of the work includes removal of sediment and nutrient accumulation, and improvement of watercraft navigation. The project is located in the southeast Quarter of Section 18, Township 36 North and Range 12 East in Steuben County.

Based on available information, it is the judgment of this office that the proposed project will comply with the applicable provisions of 327 IAC 2 and Sections 301, 302, 303, 306, and 307 of the Clean Water Act if the recipient of the certification complies with the conditions set forth below. Therefore, subject to the following conditions, the Indiana Department of Environmental Management (IDEM) hereby grants Section 401 Water Quality Certification for the project described in your application dated October 8, 2004, and received October 20, 2004. Any changes in project design or scope not detailed in the application described above or modified by the conditions below are not authorized by this certification.

GENERAL CONDITIONS:

The recipient of the certification shall:

1. Deposit any dredged material in a contained upland disposal area to prevent sediment runoff to any waterbody. Dispose of all dredged and excavated material according to the requirements of 329 IAC 10, governing Solid Waste Land Disposal Facilities. Your project information may be forwarded to the IDEM Office of Land Quality, Industrial Waste Section for review. Sampling may be required to determine if the dredged sediment is contaminated. Failure to properly dispose of contaminated sediment may result in enforcement action against you.
2. Install erosion control methods prior to any soil disturbance to prevent soil from leaving the construction site. Appropriate erosion control methods include, but are not limited to, straw bale barriers, silt fencing, erosion control blankets, phased construction sequencing, and earthen berms. Monitor and maintain erosion control structures and devices regularly, especially after rain events, until all soils disturbed by construction activities have been permanently stabilized.
3. Clearly mark the construction limits at the project site during construction.
4. Allow the commissioner or an authorized representative of the commissioner (including an authorized contractor), upon the presentation of credentials:
 - a. to enter the property of the recipient of the certification;
 - b. to have access to and copy at reasonable times any records that must be kept under the conditions of this certification;
 - c. to inspect, at reasonable times, any monitoring or operational equipment or method; collection, treatment, pollution management or discharge facility or device; practices required by this certification; and any mitigation wetland site;
 - d. to sample or monitor any discharge of pollutants or any mitigation wetland site.
5. Complete all approved discharges no later than two (2) years of the date of issuance of this Section 401 Water Quality Certification. The applicant may request a one (1) year extension to the Section 401 Water Quality Certification by submitting a written request ninety (90) days prior to the deadline stated above. The written request shall contain an account of which discharges and mitigation have been completed and list the reasons an extension is requested.

PROJECT SPECIFIC CONDITIONS:

The recipient of the certification shall:

1. Contact Mr. Steve West of the Office of Water Quality within 30 days of the receipt of this certification to determine if sampling is required for the return water from the dewatering basin. Mr. West can be reached at (317) 233-8905.
2. Contact the IDEM project manager prior to beginning dredging activities.
3. Allow no dredging to occur in wetland fringe areas located at the confluence of Mud Creek and Big Turkey Lake (see attachment A). Also avoid significant aquatic plant beds which serve to filter nutrients and reduce wave action.
4. Allow no spoil to re-enter the waterway or be sidecast into wetlands. All spoil must be transported/ piped to the approved upland dewatering location.
5. Periodically inspect the riprap filter apron at the dewatering location to ensure proper function. Also periodically inspect the dewatering location for breaches during execution of the project.
6. Remove any temporary causeway or other structures used to facilitate construction or access upon completion of construction activities.
7. Install silt fence or other erosion control measures around the perimeter of any wetlands and/or other waterbodies to remain undisturbed at the project site.
8. Allow no construction equipment, temporary run-arounds, coffer dams, causeways, or other such structures to enter or be constructed within the stream, unless specifically stated, depicted, or detailed in the aforementioned correspondence and project plans. A modification of this Section 401 Water Quality Certification is required from this office if any of the aforementioned items are needed for project construction.

This certification does not relieve the recipient of the responsibility of obtaining any other permits or authorizations that may be required for this project or related activities from IDEM or any other agency or person. You may wish to contact the Indiana Department of Natural Resources at 317-232-4160 (toll free at 877-928-3755) concerning the possible requirement of natural freshwater lake or floodway permits. In addition, you may wish to contact IDEM's Stormwater Permits Section at 317-233-1864 concerning the possible need for a 327 IAC 15-5 (Rule 5) permit if you plan to disturb greater than one (1) acre of soil during construction.

This certification does not:

- (1) authorize impacts or activities outside the scope of this certification;

- (2) authorize any injury to persons or private property or invasion of other private rights, or any infringement of federal, state or local laws or regulations;
- (3) convey any property rights of any sort, or any exclusive privileges;
- (4) preempt any duty to obtain federal, state or local permits or authorizations required by law for the execution of the project or related activities; or
- (5) authorize changes in the plan design detailed in the application.

Failure to comply with the terms and conditions of this Section 401 Water Quality Certification may result in enforcement action against the recipient of the certification. If an enforcement action is pursued, the recipient of the certification could be assessed up to \$25,000 per day in civil penalties. The recipient of the certification may also be subject to criminal liability if it is determined that the Section 401 Water Quality Certification was violated willfully or negligently.

This certification is effective eighteen (18) days from the mailing of this notice unless a petition for review and a petition for stay of effectiveness are filed within this 18-day period. If a petition for review and a petition for stay of effectiveness are filed within this period, any part of the certification within the scope of the petition for stay is stayed for fifteen (15) days, unless or until an Environmental Law Judge further stays the certification in whole or in part.

This decision may be appealed in accordance with IC 4-21.5, the Administrative Orders and Procedures Act. The steps that must be followed to qualify for review are:

1. You must petition for review in writing that states facts demonstrating that you are either the person to whom this decision is directed, a person who is aggrieved or adversely affected by the decision, or a person entitled to review under any law.

2. You must file the petition for review with the Office of Environmental Adjudication (OEA) at the following address:

Office of Environmental Adjudication
100 North Senate Avenue
IGCN Room N1049
Indianapolis, IN 46204

3. You must file the petition within eighteen (18) days of the mailing date of this decision. If the eighteenth day falls on a Saturday, Sunday, legal holiday, or other day that the OEA offices are closed during regular business hours, you may file the petition the next day that the OEA offices are open during regular business hours. The petition is deemed filed on the earliest of the following dates: the date it is personally delivered to OEA; the date that the envelope containing the petition is postmarked if it is mailed by United States mail; or, the date it is shown to have been deposited with a private carrier on the private carrier's receipt, if sent by private carrier.

Identifying the certification, decision, or other order for which you seek review by number, name of the applicant, location, or date of this notice will expedite review of the petition.

Note that if a petition for review is granted pursuant to IC 4-21.5-3-7, the petitioner will, and any other person may, obtain notice of any prehearing conferences, preliminary hearings, hearings, stays, and any orders disposing of the proceedings by requesting copies of such notices from OEA.

If you have procedural questions regarding filing a petition for review you may contact the Office of Environmental Adjudication at 317-232-8591.

If you have any questions about this certification, please contact Mr. Ryan Cassidy, Project Manager, of my staff at 317-234-1221, or you may contact the Office of Water Quality through the IDEM Environmental Helpline (1-800-451-6027).

Sincerely,



Martha Clark Mettler, Chief
Watershed Planning Branch
Office of Water Quality

Enclosure

cc: John Konik, USACE- Detroit (w/o enclosure)
Liz McCloskey, USFWS (w/o enclosure)
Keith Poole, IDNR (w/o enclosure)
John Richardson, J.F. New and Associates Inc. (w/o enclosure)

DEPARTMENT OF THE ARMY

DETROIT DISTRICT, CORPS OF ENGINEERS

REGULATORY OFFICE

SOUTH BEND FIELD OFFICE

2422 VIRIDIAN DRIVE SUITE # 101

SOUTH BEND, INDIANA 46628

June 28, 2004

IN REPLY REFER TO

File No. 03-176-090-1

Stan Poeppel
Big Turkey Lake Improvement Association
4302 East Tillman Road
Fort Wayne, Indiana 46816

Dear Mr. Poeppel:

Refer to your application for a Department of the Army (DA) permit to hydraulically dredge Big Turkey Lake and deliver return water to the lake near Stroh, Indiana (Section 18, Township 36N, Range 12E, Steuben County). We have received a copy of a letter sent to you by the State of Indiana, Department of Environmental Management dated June 21, 2004, (IDEM, copy enclosed), wherein they deny certification for your permit request as submitted.

Paragraph 320.4(j)(1) of the regulations for the Regulatory Program of the Corps of Engineers, published in the Federal Register on November 13, 1986, states that the DA permit will be denied without prejudice when required State or local authorization and/or certification has been denied. Therefore, your permit request is denied as of this date.

If you intend to challenge the IDEM decision to deny certification to your initial request, please keep us advised so that we may determine if proposed modifications to your proposal would be acceptable under Corps regulations. There is no assurance that you will receive a DA permit after satisfactory resolution with IDEM.

We remind you that work can be accomplished only after receipt of a DA permit. Should you have questions on this matter, contact me at the above address or telephone (574) 232-1952. Please refer to File Number: 03-176-090-1.

Sincerely,

ORIGINAL SIGNED BY

John C. Ritchey
Project Manager
South Bend Field Office

Enclosure

Copy Furnished

Indiana Department of Environmental Management
Indiana Department of Natural Resources
JF New and Associates, Inc, w/encl. (Richardson)

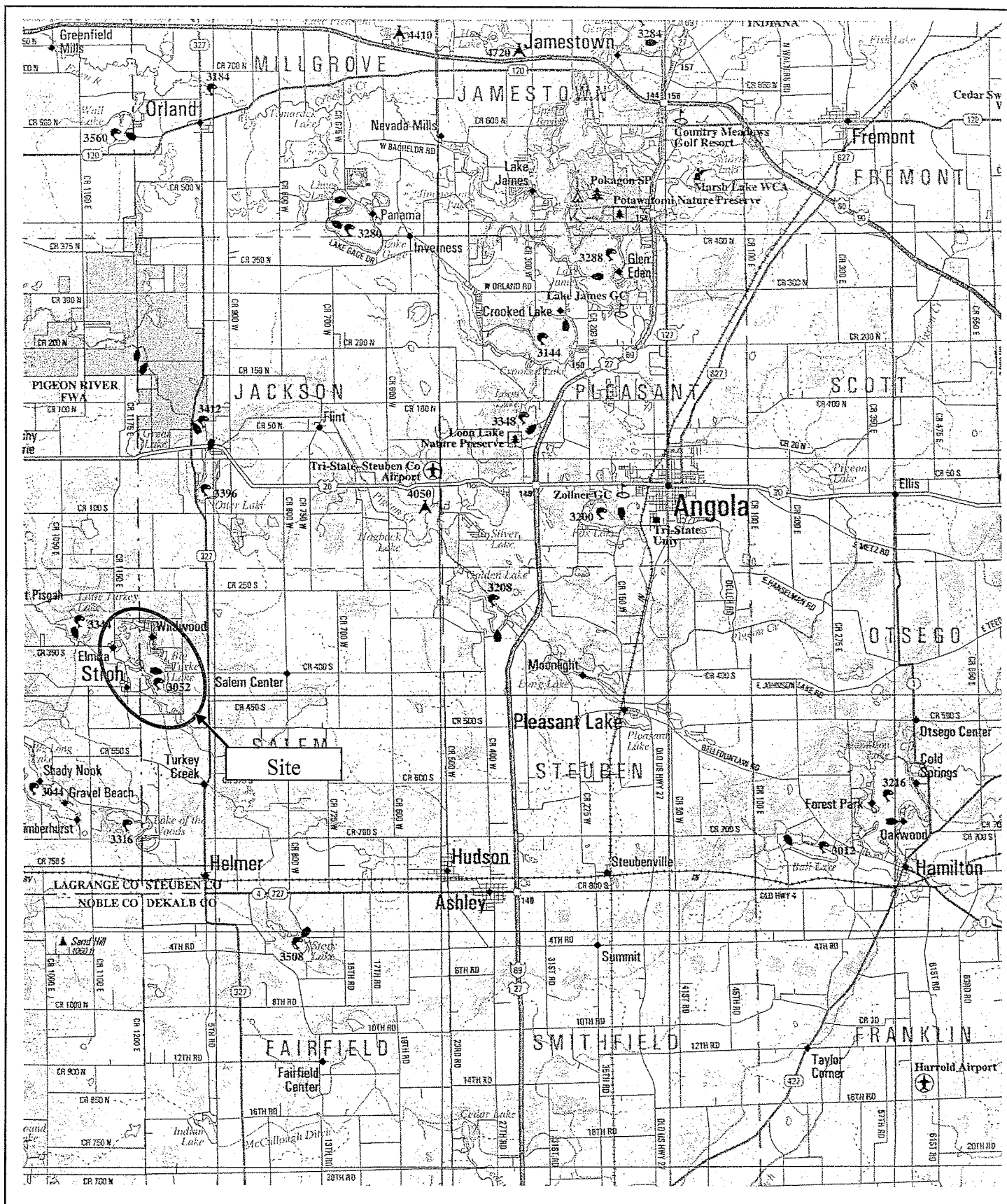


Figure 1: Project location map
Big Turkey Lake
Big Turkey Lake Improvement
Association
Steuben County, Indiana



Scale: 1" = 2.5 mi.

JFNew # 00-08-03
 (02)



708 Roosevelt Road, Walkerton, IN 46574
 Phone 574-586-3400 / Fax 574-586-3446
www.jfnew.com

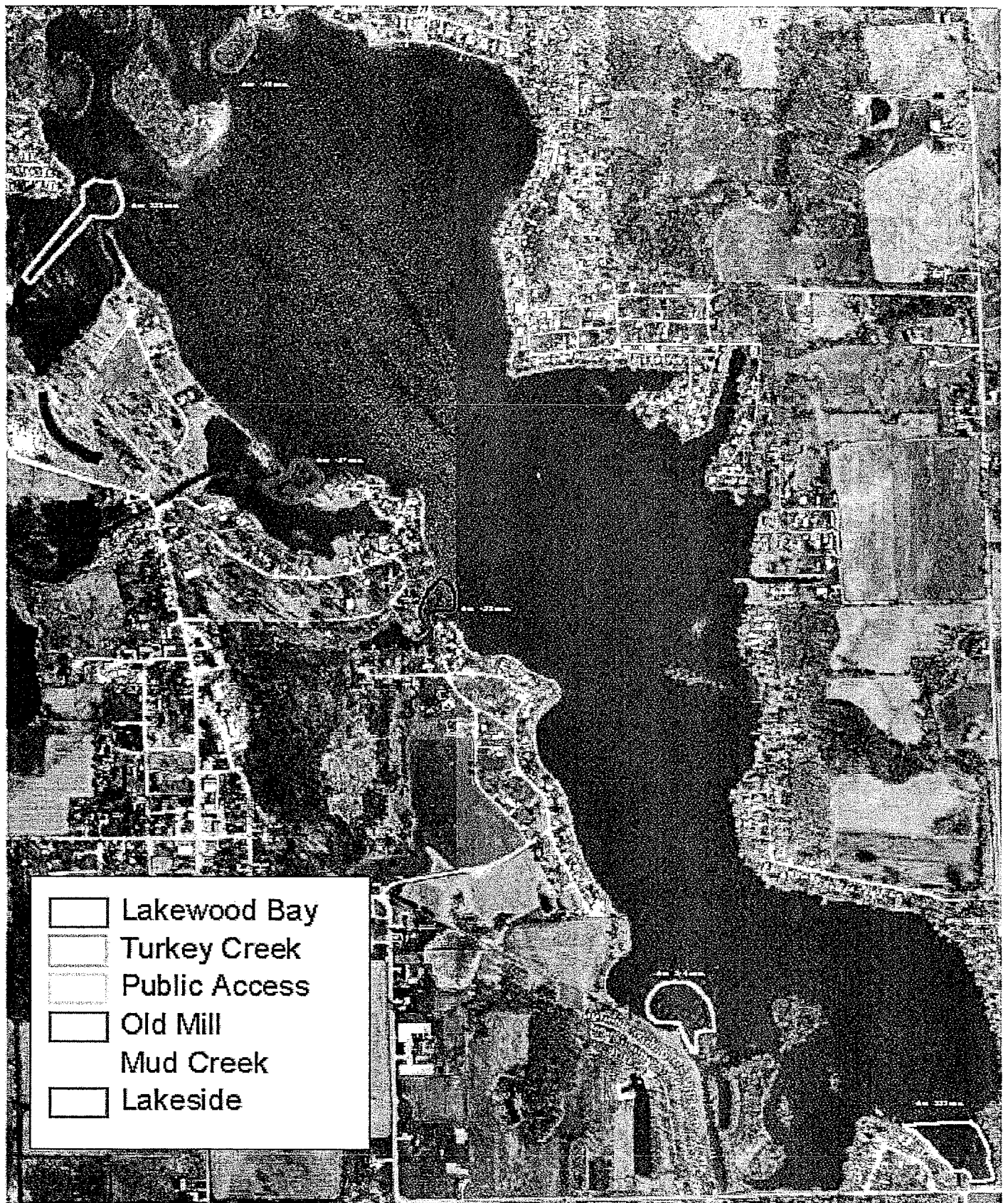


Figure 2: Description
 Big Turkey Lake
 Big Turkey Lake Improvement
 Association
 Steuben County, Indiana



Scale: 1" = 3,000'

JFNew # 00-08-03
 (02)



708 Roosevelt Road, Walkerton, IN 46574
 Phone 574-586-3400 / Fax 574-586-3446
www.jfnew.com



**Figure 3: Lakewood Bay dredging
Big Turkey Lake
Big Turkey Lake Improvement
Association
Steuben County, Indiana**



Scale: 1" = 100'

JFNew # 00-08-03
(02)



708 Roosevelt Road, Walkerton, IN 46574
Phone 574-586-3400 / Fax 574-586-3446
www.jfnew.com

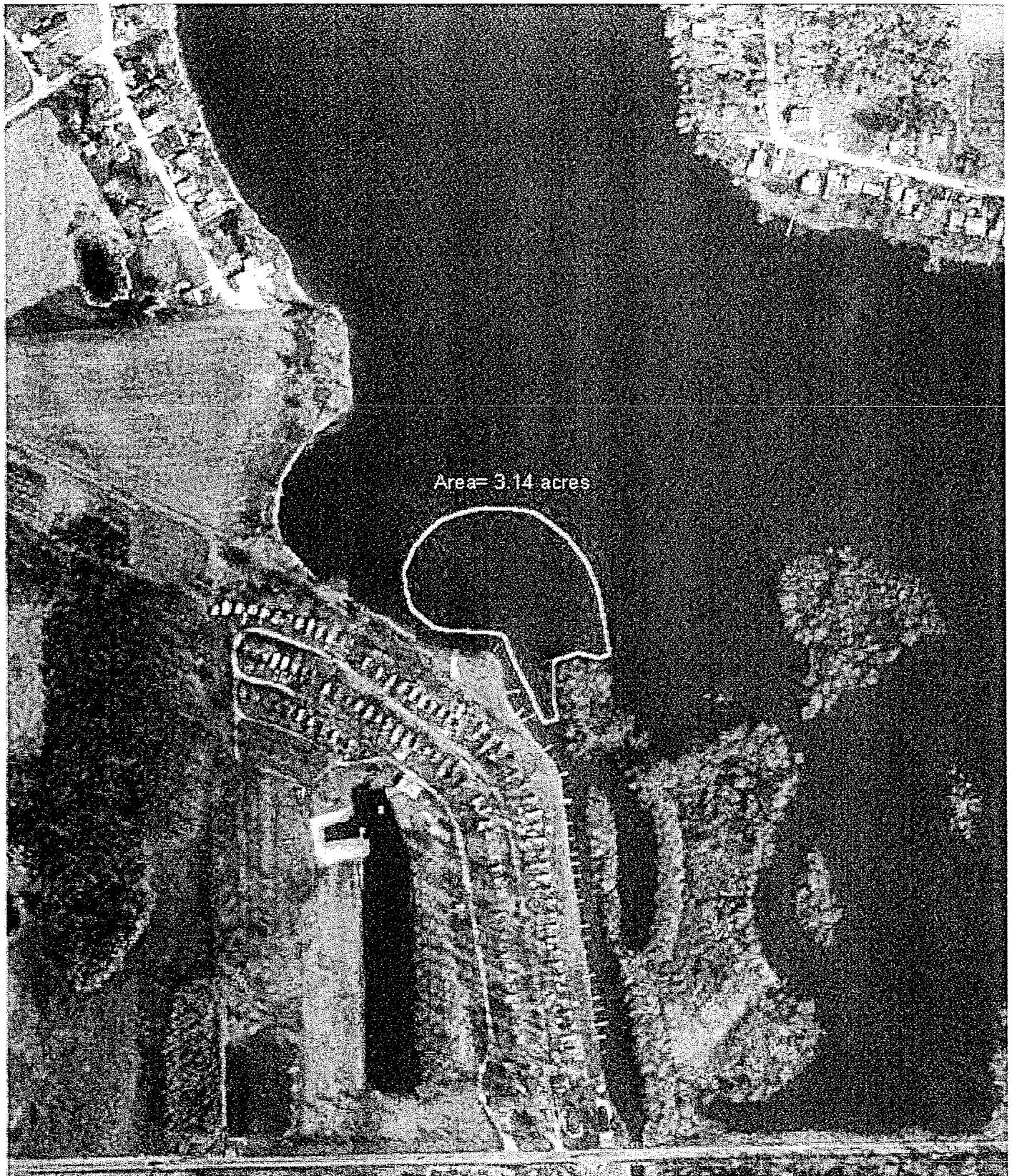


Figure 4: Turkey Creek Outlet dredging
Big Turkey Lake
Big Turkey Lake Improvement
Association
Steuben County, Indiana



Scale: 1" = 100'

JFNew # 00-08-03
(02)



708 Roosevelt Road, Walkerton, IN 46574
Phone 574-586-3400 / Fax 574-586-3446
www.jfnew.com



**Figure 5: Public Access dredging
Big Turkey Lake
Big Turkey Lake Improvement
Association
Steuben County, Indiana**



Scale: 1" = 100'

JFNew # 00-08-03
(02)



708 Roosevelt Road, Walkerton, IN 46574
Phone 574-586-3400 / Fax 574-586-3446
www.jfnew.com

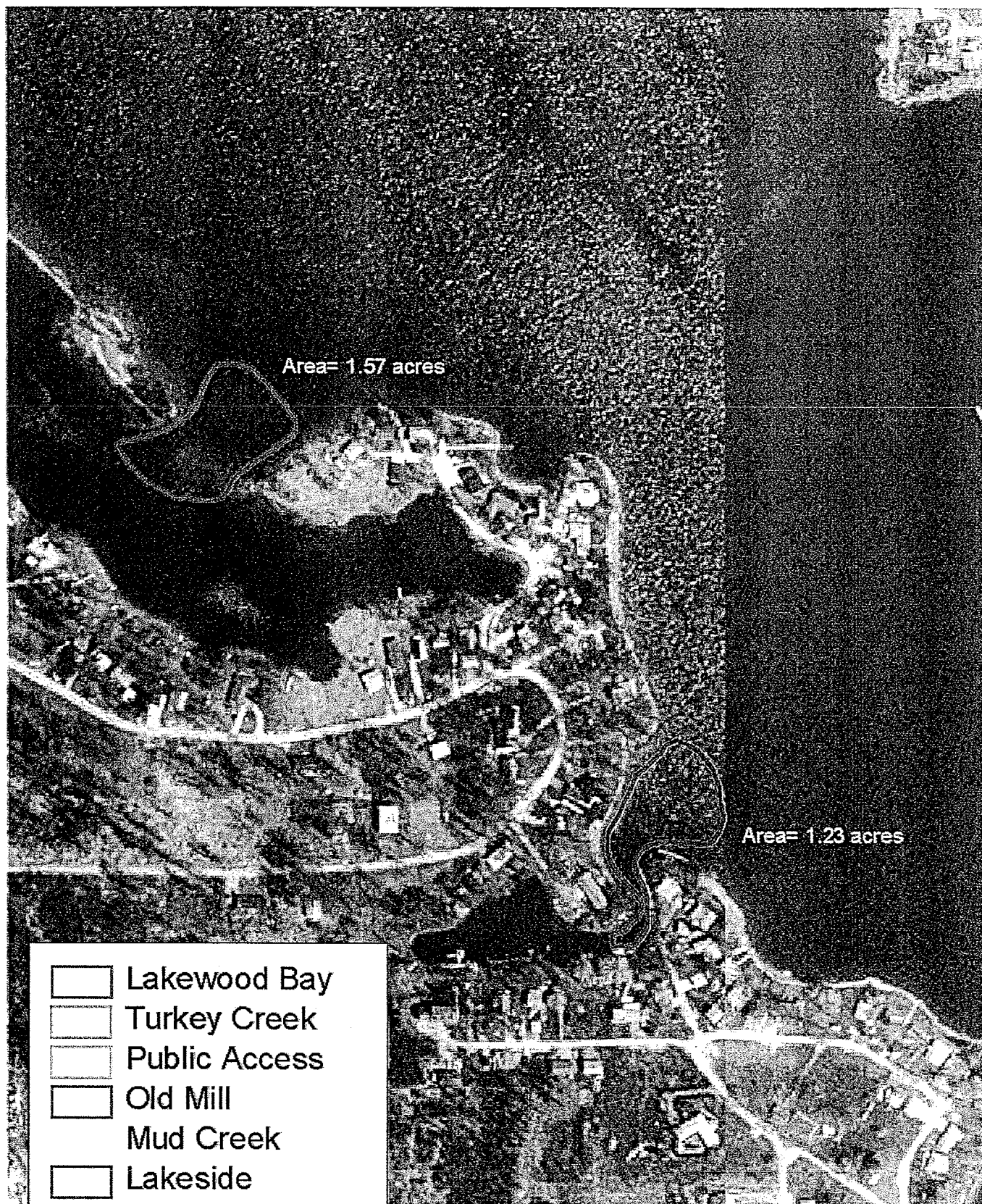


Figure 6: Old Mill & Lakeside dredging
Big Turkey Lake
Big Turkey Lake Improvement
Association
Steuben County, Indiana

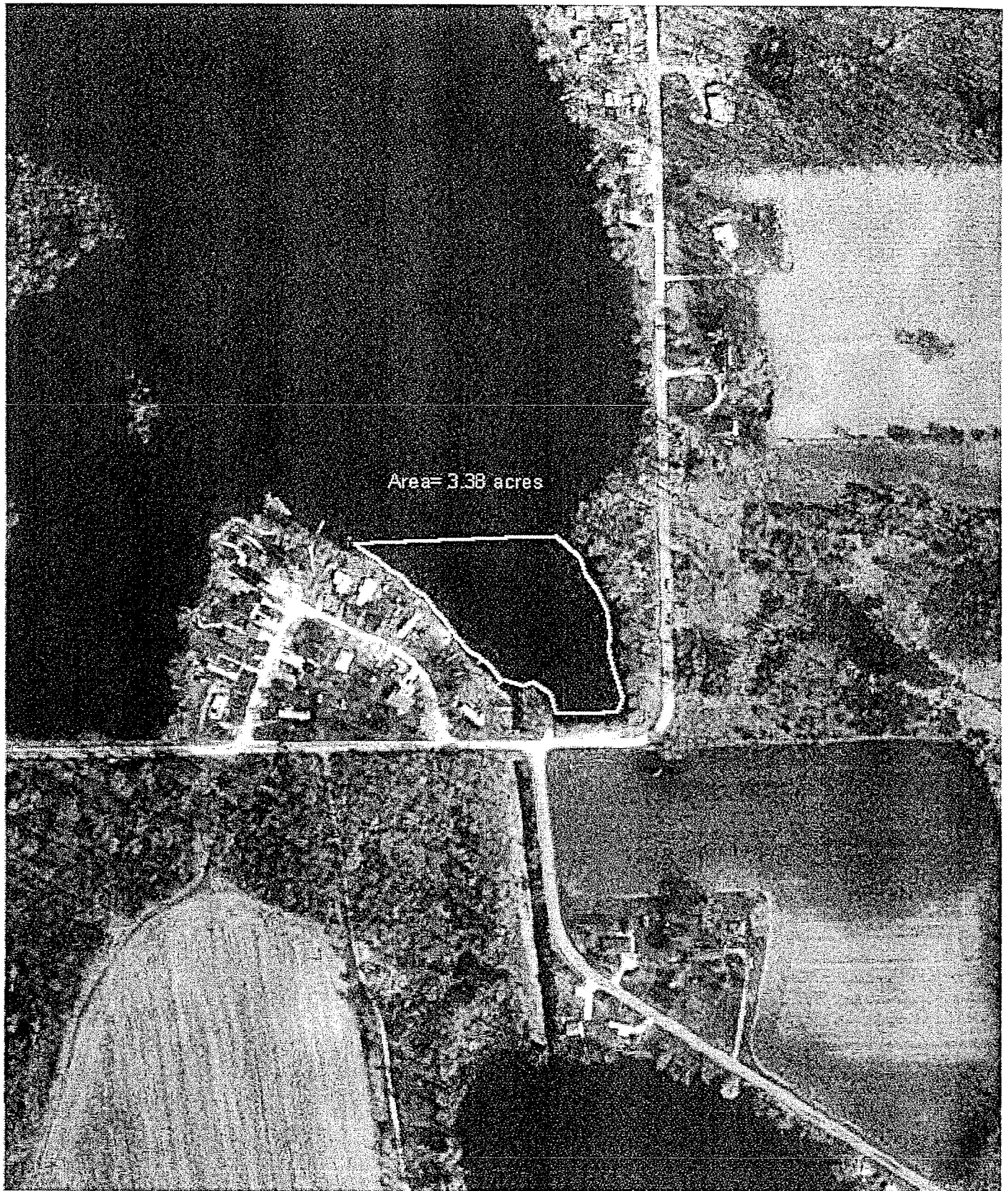


Scale: 1" = 100'

JFNew # 00-08-03
(02)



708 Roosevelt Road, Walkerton, IN 46574
Phone 574-586-3400 / Fax 574-586-3446
www.jfnew.com



**Figure 7: Mud Creek Outlet dredging
Big Turkey Lake
Big Turkey Lake Improvement
Association
Steuben County, Indiana**



Scale: 1" = 100'

JFNew # 00-08-03
(02)



708 Roosevelt Road, Walkerton, IN 46574
Phone 574-586-3400 / Fax 574-586-3446
www.jfnew.com

STATE OF INDIANA
DEPARTMENT OF NATURAL RESOURCES

MAILED FEB 02 2005

**CERTIFICATE OF APPROVAL
PUBLIC FRESHWATER LAKE**

APPLICATION # : PL-20000

LAKE : Big Turkey Lake

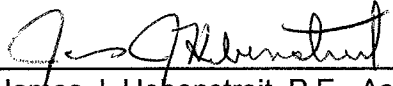
APPLICANT : Big Turkey Lake Improvement Association
Patty Wittler
1255 Lane 180 Turkey Lake
Hudson, IN 46747-9224

AGENT : J F New & Associates, Inc
John Richardson
708 Roosevelt Road
Walkerton, IN 46574-1220

AUTHORITY : IC 14-26-2 with 312 IAC 11

DESCRIPTION : An existing 35' x 650' channel will be restored to its original condition. Approximately 2,106 cubic yards of accumulated muck and debris will be removed from the channel bed by hydraulically dredging to a maximum depth of 2.5' below the lake's legal level. The excavated material will be removed to an offsite location. Details of the project are contained in information received electronically at the Division of Water on October 7, 2004, and in plans and information received at the Division of Water on October 12, 2004, and December 15, 2004 and January 28, 2005.

LOCATION : On the east shore of the lake along the West View Addition channel and its mouth near Stroh, Salem Township, Steuben County
SE¼, SW¼, SE¼, Section 7, T 36N, R 12E, Stroh Quadrangle
UTM Coordinates: Downstream 4605199 North, 651497 East

APPROVED BY : 
James J. Hebenstreit, P.E., Assistant Director
Division of Water

APPROVED ON : February 2, 2005

Attachments: Notice Of Right To Administrative Review
General Conditions
Special Conditions
Service List

**STATE OF INDIANA
DEPARTMENT OF NATURAL RESOURCES**

GENERAL CONDITIONS

APPLICATION #: PL- 20000

- (1) If any archaeological artifacts or human remains are uncovered during construction, federal law and regulations (16 USC 470, et seq.; 36 CFR 800.11, et al) and State Law (IC 14-21-1) require that work must stop and that the discovery must be reported to the Division of Historic Preservation and Archaeology within 2 business days.

Division of Historic Preservation and Archaeology
Room W274
402 West Washington Street
Indianapolis, IN 46204

Telephone: (317) 232-1646, FAX: (317) 232-8036

- (2) This permit must be posted and maintained at the project site until the project is completed.
- (3) This permit does not relieve the permittee of the responsibility for obtaining additional permits, approvals, easements, etc. as required by other federal, state, or local regulatory agencies. These agencies include, but are not limited to:

Agency	Telephone Number
*US Army Corps of Engineers, Detroit District	(313) 226-2218
St. Joseph River Basin Commission	(574) 287-1829
Steuben County Drainage Board	(260) 668-1000
Indiana Department of Environmental Management	(317) 233-8488 or (800) 451-6027
Local city or county planning or zoning commission	

- (4) This permit must not be construed as a waiver of any local ordinance or other state or federal law.
- (5) This permit does not relieve the permittee of any liability for the effects which the project may have upon the safety of the life or property of others.
- (6) This permit may be revoked by the Department of Natural Resources for violation of any condition, limitation or applicable statute or rule.
- (7) This permit shall not be assignable or transferable without the prior written approval of the Department of Natural Resources. To initiate a transfer contact:

Mr. Michael W. Neyer, PE, Director
Division of Water
Room W264
402 West Washington Street
Indianapolis, IN 46204

Telephone: (317) 232-4160, Toll Free: (877) 928-3755
FAX: (317) 233-4579

- (8) The Department of Natural Resources shall have the right to enter upon the site of the permitted activity for the purpose of inspecting the authorized work.
- (9) The receipt and acceptance of this permit by the applicant or authorized agent shall be considered as acceptance of the conditions and limitations stated on the pages entitled "General Conditions" and "Special Conditions".

**STATE OF INDIANA
DEPARTMENT OF NATURAL RESOURCES**

SERVICE LIST

APPLICATION #: PL- 20000

Big Turkey Lake Improvement Association
Patty Wittler
1255 Lane 180 Turkey Lake
Hudson, IN 46747-9224

J F New & Associates, Inc
John Richardson
708 Roosevelt Road
Walkerton, IN 46574-1220

*US Army Corps of Engineers, Detroit District
Gary Mannesto
Regulatory Functions Branch
PO Box 1027
Detroit, MI 48231-1027

Dredging Technologies, Inc
Jeff Krevda
4896 East 200 South
Marion, IN 46953-9135

St. Joseph River Basin Commission
Karen M Mackowiak
227 West Jefferson Boulevard - #1120
South Bend, IN 46601-1830

Steuben County Drainage Board
County Surveyor
County Office Building
317 South Wayne Street, Suite 3K
Angola, IN 46703-1958

Steuben County Lakes Council, Inc
Sue Myers, Secretary
207 South Wayne Street, Suite B
Angola, IN 46703-1936

*Indiana Department of Natural Resources
North Region Headquarters Dist 2
Division of Law Enforcement
1124 North Mexico Road
Peru, IN 46970

Steuben County Plan Commission
317 South Wayne Street
Suite 3-L
Angola, IN 46703-1966

Steuben County Soil and Water Conservation
District
Peachtree Plaza 200
1220 North 200 West
Angola, IN 46703-9171

Staff Assignment:

Administrative	: Becky S. Davis
Technical	: Becky S. Davis
Environmental	: Christie L. Kiefer